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[54] **METHOD AND APPARATUS FOR FABRICATING SELF-ASSEMBLING MICROSTRUCTURES**

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Related U.S. Application Data

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[51] **Int. Cl.**[6] **H01L 21/00**

[52] **U.S. Cl.** **156/655.1**; 156/659.11; 156/633.1; 156/649.1; 216/2; 216/39

[58] **Field of Search** 216/2, 18, 20, 216/33, 39; 156/655.1, 657.1, 662.1, 633.1, 297, 298, 299, 649.1, 659.11

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[57] **ABSTRACT**

A method and apparatus for assembling microstructures onto a substrate through fluid transport. The microstructures being shaped blocks self-align into recessed regions located on a substrate such that the microstructure becomes integral with the substrate. The improved method includes a step of transferring the shaped blocks into a fluid to create a slurry. Such slurry is then dispensed evenly or circulated over the top surface of a substrate having recessed regions thereon. The microstructure via the shape and fluid tumbles onto the surface of the substrate, self-aligns, and engages into a recessed region.

28 Claims, 12 Drawing Sheets